NOTE ON THE EFFECTS OF SMALL AND PERSISTENT INFLUENCES

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REVOLUTIONARY changes in public opinion, such as are needed to establish a general practice of Eugenics, are usually caused by events acting upon a community already prepared to profit by them. This preparation, though perhaps only half consciously perceived, has nearly always been caused by the persistent action of many small influences. As examples of the large effects that may be produced by small influences, acting continuously in other than social directions, consider how a rudder slowly deflects the course of a huge steamship into an exactly opposite direction to her original course, or how the landing of a salmon of thirty or more pounds weight is effected by the weak tackle of an angler. The force of the fish is such as to project him up a salmon-leap of six feet or more in height, yet the angler's tackle, which is barely strong enough to support a weight of two pounds, ultimately overcomes him. By the elasticity of the rod and by the paying out of line, the sudden rushes of the fish are translated into long and comparatively gentle pulls, so the force the tackle has to withstand at any moment never reaches its breaking limit.

Many striking examples of the way in which travellers have been unconsciously deflected from their proposed course, and turned quite round, came under my notice half a century ago when collecting materials for *Art of Travel*. Instead, however, of recounting these personal experiences, let me cite one described to me very recently in a letter from a young lady friend.

"We took a tiring walk in the rain. I must tell you what happened. We went on the road to X. (about one mile) and turned into some fields on the right; thence we dived into a thick wood on the right, meaning to walk straight home across country. We seemed to be going quite straight, and fully expected to find ourselves in the fields close to our lodgings, when lo and behold, we emerged into the same field we had started from, only on the left. So, thinking we had walked straight, we really made a circle. I have often read of people doing this, but believed it impossible."

The explanation of this "impossibility" is simple enough.

Deflection may be caused by one or more of numerous slight tricks or habits, inappreciable in a single step, but producing large effects when accumulated. Among these is a greater tendency to rotate on the one foot than on the other, an unequal overlap of the feet, and probably some mental peculiarities. The result is, that the path of the same person has a small but constant tendency to be deflected to the right or to the left, as the case may be, and this in the absence of any guidance makes him or her walk in a rude circle.

It is worth while to calculate the amount of deflection in the case of my correspondent on the supposition, justified by subsequent inquiry, that she travelled $2\frac{1}{2}$ miles, and that the length of her pace was $2\frac{1}{2}$ feet. There are 5,280 feet in a mile, so in $2\frac{1}{2}$ miles she would have made 5,280 paces in travelling round the circumference of a circle (360 degrees). She would have therefore taken on an average $14\frac{1}{2}$ paces (14·666 more exactly) to turn through one degree; or half that number, $7\frac{1}{4}$ paces, to turn through half a degree. Now half a degree is a very minute quantity. It occupies as much of the horizon as is cut off by the breadth of an ordinary lead pencil ($\frac{1}{4}$-inch thick) held at right angles to the line of vision, at the distance of 29 inches, which is the extreme reach of the hand of a somewhat tall person. Half a degree may be otherwise reckoned as approximately equal to the apparent diameter of the sun when on the horizon. The deflection at each step of my correspondent was therefore so small as to be quite unappreciable by ordinary observation, yet the sum of these deflections caused a complete revolution at the end of a $2\frac{1}{2}$-mile walk.

So it is with public opinion. It may be slow to deflect, but if deflected gently and continuously in the same direction by reasonable advocacy, it may be ultimately turned quite round by that agency alone. This is precisely the method attempted by the Society of which this REVIEW is the organ. Its supporters rely on the power of gentle, persistent effort to turn public opinion in favour of Eugenics, and they believe that, once opinion is so turned, Eugenic practice will follow. For although, if watched for a short time only, public opinion appears to be stable, few things are more unstable in the long run.